Managing Jobs

The Grid Engine scheduler

The scheduler is the middleware agent that takes care of monitoring the status of resources in the system, of evaluating users submission and matching requested resources and available resources to dispatch users job for execution on the appropriate nodes. The users need to interact with the scheduler to submit their requests, monitor the status of their jobs and if necessary interrupt their own jobs.

The basic most commonly used scheduler commands are:

<table>
<thead>
<tr>
<th>Scheduler command</th>
<th>use</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>qsub [ options ] jobscript.txt</code></td>
<td>Submits the job jobscript.txt to the scheduler</td>
</tr>
<tr>
<td><code>qstat</code></td>
<td>Returns a list of the jobs currently in the queue for the current users</td>
</tr>
<tr>
<td><code>qrsh [ options ]</code></td>
<td>Submits a request for an interactive session to the scheduler. Accepts (almost all) the same options as <code>qsub</code>.</td>
</tr>
<tr>
<td><code>qdel some_job_ID</code></td>
<td>Requests to the scheduler to kill the job with jobID &quot;some_job_ID&quot;</td>
</tr>
</tbody>
</table>

- Submitting a batch job: `qsub`
  - `qsub` typical use cases
    - How to run a simple serial job?
    - How to use job relocation upon suspension
    - Output and Error files
    - How to run a parallel job?
    - Large Memory Jobs
    - Job Array, large number of (nearly)identical jobs?
    - Job Dependencies
    - Soft requests
    - Local scratch space

- Interactive sessions: `qrsh`

- Monitor your jobs: `qstat`
  - `qstat` typical use cases
    - How to check my jobs?
    - How to see all the jobs in the queueing system?
    - How to see the general status of the queues to see if there are slots available?
    - How can I get a list with the status of the nodes associated to my queue?
    - How can I see who is running in my queue?
    - How can I see who is running on my node?
    - How to get additional information on memory and cpu usage of my job?
    - How to get additional information on a node?

- Deleting your jobs: `qdel`
- Modify a pending job: `qalter`
- Suspending jobs: `qmod`
- Tips on how to run some popular applications
  - How to run Matlab jobs